

REMARKS UNDER 37 CFR § 1.116

Formal Matters

Claims 2, 3, 7-9, 12, 14, and 17-44 are pending after entry of the amendments set forth herein.

Claims 2, 3, 7-9, 11, 12, 14, and 17-40 were examined. Claims 2, 3, 7, 8, 11, 12, 14, 17-34 and 37-40 were rejected. Claims 9, 35, and 36 were objected to as being dependent upon a rejected base claim, but were otherwise indicated to be allowable.

Claims 8, 17, 23 and 31 have been amended. Claims 11, 25-30 have been canceled, without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein. Claims 41-43 have been added to provide allowable claims 9, 35 and 36 in independent form. Claim 44 has been provided to further define the housing of the present invention over the art currently applied against the previous claims.

The amendments to the claims were made solely in the interest of expediting prosecution, and are not to be construed as an acquiescence to any objection or rejection of any claim. Support for the amendments and additions to the claims is found throughout the specification. Accordingly, no new matter is added by these amendments and additions.

Please replace claims 2, 8, 14, 17, 23, 24 and 31 with the clean version provided above.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

Applicant respectfully requests reconsideration of the application in view of the amendments and remarks made herein.

Rejections under 35 U.S.C. §102(e)

The rejection of claims 2, 3, 7, 8, 17-22, 23, and 25-31 under 35 U.S.C. §102(e) as being anticipated by Wright et al., (U.S. Patent No. 5,782,746) is respectfully traversed. The Examiner maintained that Wright et al. discloses a dome-shaped housing, concluding that the showing of a semicircular cross-section in Figs. 2-4 equates to the housing of Wright et al. being dome-shaped. Applicant respectfully disagrees with this reasoning. The Wright et al. specification itself describes the structure that the Examiner has referred to as a U-shaped, circular or elliptical annulus. An annulus is not a dome, but rather is a figure bounded by and containing the area between two concentric circles.

Thus, for the record, Applicant traverses the assertion of the Examiner. However, this point is now moot in view of the amendment of claims above.

As amended, independent claim 17 recites a housing having a bottom surface forming a complete ring shaped to engage a portion of the surface of the heart, wherein said housing comprises internal and external walls which extend from said bottom surface and converge toward one another to define an interior space which is radially inward of said bottom surface and at least partially covered by said internal and external walls. Wright et al. clearly fails to disclose or suggest such a housing. Similarly, independent claim 23 has been amended to recite a housing having a bottom surface forming a complete ring shaped to engage the surface of the heart, wherein the housing comprises internal and external walls which extend from said bottom surface and converge toward one another to define an interior space which is radially inward of said bottom surface and at least partially covered by said internal and external walls. Wright et al. clearly fails to disclose or suggest a housing as currently recited in claim 23. The remaining claims each depend from one of independent claims 17 and 23 and it is therefore respectfully submitted that these claims also patentably define over Wright et al. New claim 44 similarly recites a housing structure that defines over Wright et al., for the same reasons provided above with regard to claims 17 and 23.

For at least the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 2, 3, 7, 8, 17-22, 23, and 25-31 under 35 U.S.C. §102(e) as being anticipated by Wright et al., (U.S. Patent No. 5,782,746), as being improper.

The rejection of claims 11, 12, 14 and 24 under 35 U.S.C. §102(e) as being anticipated by Vierra et al. (U.S. Patent No. 6,139,492) is respectfully traversed. Independent claim 24 has been amended to clarify that each suction port assembly is comprised of a block having a plurality of suction ports having openings disposed in a bottom surface thereof. The purpose of having the openings of the suction ports in the bottom surface of the block is to functionally attach the claimed device to the cardiac tissue at various points of contact along the block (see page 13, lines 16 and 17).

On the other hand, Vierra et al. provides holes 73 on the inside surfaces of arms 15 and 17 of their device which are connected to a lumen 75 which may be coupled to a vacuum source to suction fluids from the surgical site out the of the patient. Moreover, Vierra et al. teach against placing the holes 73 on the bottom surface of arms 15 and 17. If the suction holes were so positioned, their function of clearing the fluid from the surgical site would be defeated as no fluid would be able to pass through to the suction holes as they would be closed off by contact with the surface of the heart.

Accordingly, Vierra et al. do not anticipate or make obvious claims 12, 14 and 24 (claim 11 having been canceled without prejudice). The Examiner is thus respectfully requested to withdraw the rejection, as being improper.

Claims 11, 12, 14 and 24 were also rejected under 35 U.S.C. §102(e) as being anticipated by Slater et al. (U.S. Patent No. 5,417,709). Applicant respectfully disagrees with the statement on page 2 of the office action that each block 18a and 18b has a plurality of ports 29a and 29b in its bottom surface. As described in Slater, the end effectors 18a and 18b have one or more fluid openings 29a and 29b located on “inner face surfaces” 19a and 19b, respectively (see column 4, line 17-19). The “inner face surfaces” oppose each other when the end effectors are in a closed position. As such, only one or the other of these surfaces can logically be referred to as a “bottom” surface. If one is a bottom surface, the other must be a top surface. Both cannot be characterized as a bottom surface. As such, Slater does not disclose that each block have a plurality ports on the bottom surface of the block. Moreover, Slater teaches against such a configuration. Should both end effectors have openings on their respective “bottom” surfaces, the function of one set of openings would be defeated as it would be facing away from the targeted surgical area or tissue surface or the area/surface requiring irrigation or suction.

Accordingly, Slater does not anticipate or make obvious claims 12, 14 and 24. The Examiner is thus respectfully requested to withdraw the rejection.

The rejection of claims 25-31 under 35 U.S.C. §102(e) as being anticipated by Borst et al. (U.S. Patent No. 5,9,27,284) has been render moot as claims 25-30 have been canceled, without prejudice and claim 31 has been amended to be dependent upon claim 23.

Rejections under 35 U.S.C. §103(a)

The rejection of claims 17-22 under 35 U.S.C. §103(a) as being unpatentable over Borst et al. in view of Wright is respectfully traversed. As previously stated, Wright does not disclose or suggest a semi-spherical or dome-shaped housing. Furthermore, the device disclosed in Wright does not possess suction ports, but rather, the device consists of a relatively flat annular element that rests upon the heart surface, whereby the inner and outer edges form a seal with the heart surface. Vacuum pressure is applied to the entire area between the two concentric edges of the annular device.

Accordingly, Borst et al. or Wright, either alone or in combination, do not teach or suggest the subject matter of claims 17-22. The Examiner is thus respectfully requested to withdraw the rejection.

The rejection of claims 32-34 and 37-40 under 35 U.S.C. §103(a) as being unpatentable over Vierra et al. in view of Borst et al. is respectfully traversed. Independent claim 32 comprises providing an instrument having first and second shafts interlinked by a pivot wherein each shaft is attached to a respective member having at least one suction port therein. Independent claims 37 and 38 each provide for a device or instrument having first and second shafts joined by an articulating link wherein each shaft is attached to a suction port assembly or a member having at least one suction port therein. Each of the claims requires two shafts and two “feet” wherein each shaft is interconnected to one “foot.” The interlinking pivot or articulating link facilitates the device having a hand-held configuration or otherwise configured to be grasped by the hand in order to manipulate the device after negative pressure has been imposed through it to the surface of the heart. Manipulating the devices moves the feet to allow the contacted tissue to be stretched or relatively oriented (see page 6).

Vierra et al. does not disclose or suggest a dual-shaft, dual-foot configuration, rather it discloses only a single shaft having two feet attached thereto. While Borst et al. discloses using two shafts, each with an attached foot, there is no suggestion that the shafts should be interlinked together. In fact, Borst et al. appears to teach against such an interlinked configuration as each shaft is to be “fixed or immobilized to a stationary object, such as an operating table or a sternal or rib retractor.” (see column 3, lines 7-9). To interlink the shafts with each other would defeat this objective.

Accordingly, Vierra et al. or Borst et al., either alone or in combination, do not teach or suggest the subject matter of claims 17-22. The Examiner is thus respectfully requested to withdraw the rejection.

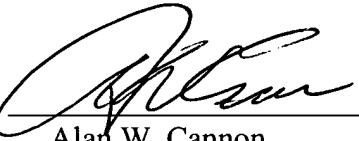
Conclusion

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number G UID-003DIV2.

Respectfully submitted,
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Date: January 24, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claim 2 was amended above as follows:

2. (Twice Amended) The device of claim 23 further comprising a means for introducing a negative pressure located between said internal and external walls [in the interior of the housing].

Claim 8 was amended above as follows:

8. (Twice Amended) The device of claim 23 further comprising at least one instrument port located in the [dome-shaped portion of the] housing.

Claim 14 was amended above as follows:

14. (Once Amended) The device of claim 12 wherein [the suction port assembly is comprised of an array of said plurality suction ports, wherein] each said suction port has a passage communication with a pressure conducting space on the interior of said block, respectively, and wherein the pressure conducting space has an inlet [an.d] which is fluidly connectable with the [is attached to a] vacuum line [affixed to the shaft].

Claim 17 was amended above as follows:

17. (Once Amended) As part of a surgical procedure on the heart, a method comprising:
accessing the surface of the heart;
providing an instrument comprising a [dome-shaped] housing having a bottom surface forming a complete ring shaped to engage a portion of the surface of the heart, wherein said housing comprises internal and external walls which extend from said bottom surface and converge toward one another to define an interior space which is radially inward of said bottom surface and at least partially covered by

said internal and external walls, and further comprising means for introducing a negative pressure to the interior of said housing;

bringing said bottom surface into contact with said portion of the surface of the heart;
applying a negative pressure through said means for introducing a negative pressure; and
attaching said housing to said portion of the surface of the heart whereby said portion of the surface of the heart becomes fixed relative to said instrument.

Claim 23 was amended above as follows:

23. (Once Amended) A device for imposing a negative pressure on the surface of the heart comprising: a [dome-shaped] housing having a bottom surface forming a complete ring shaped to engage the surface of the heart; a plurality of suction ports having openings disposed in the bottom surface of the housing; and a vacuum line operably connected to the suction ports, wherein said housing comprises internal and external walls which extend from said bottom surface and converge toward one another to define an interior space which is radially inward of said bottom surface and at least partially covered by said internal and external walls.

Claim 24 was amended above as follows:

24. (Once Amended) A device for imposing a negative pressure on the surface of the heart comprising: first and second shafts joined by an articulating link [interlinked by a pivot]; first and second suction port assemblies, wherein said first shaft is attached to said first suction port assembly and said second shaft is attached to said second port assembly; wherein each said suction port assembly is comprised of a block having a plurality of suction ports having openings disposed in a bottom surface thereof [therein], and wherein each said block is attached to a vacuum line.

Claim 31 was amended above as follows:

31. (Once Amended) The device of claim [29] 23 further comprising at least one instrument port located in the [annular] housing.